CENTER FOR COMPOSITES IN CONSTRUCTION

CENTER

The Center for Composites in Construction was funded for the first time this year. The Center has a primary focus on composite materials that may be used to strengthen or reinforce precast concrete structures such as bridge columns, freeway overpass beams, concrete walls and other structural components. The basic technology utilizes fiber-reinforced polymers woven into industrial fabrics that can be used to wrap structures or be imbedded in precast concrete designs.

TECHNOLOGY

The Center has developed a patent application for “Fiber Reinforced Polymer" (FRP) composite connections of precast concrete walls. The Center has also developed and verified FRP composite connections for strengthening bridge joints. The Center develops design guidelines and specifications for the strengthening of columns and seismic retrofit of bridge caps and joints with FRP composites.

ACCOMPLISHMENTS

One patent application is underway as noted above. The Center has been actively involved in technology transfer with the Utah Department of Transportation. Dr. Pantelides has presented a short course to UDOT structural engineers regarding the design of FRP composite retrofit of bridges. As a result, more than 70 columns of I-80 bridges will be retrofitted with the composite wraps. In addition, the State Street bridge on I-80 will get a seismic retrofit using FRP composites. The Center has also provided consulting assistance to several Utah companies including Thiokol, Monroc, Inc. (Eagle Precast Co.), Sika, Hydrotech, Waterpoint, and EDO Fiber Science.

CONTACT

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Can You Imagine...

. . . rehabilitating aged freeway bridge columns and beams by wrapping the concrete structures with a fiber reinforced fabric that would allow the structures to meet stringent seismic codes?

THE CENTER DEVELOPS TECHNOLOGIES FOR INFRASTRUCTURE REHABILITATION AND NEW CONSTRUCTION USING FIBER INFORCED POLYMER (FRP)

COMPOSITES

- I-15 in process